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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/066,742	08/12/2003	6181990	GCSD-1360 (51298)	1151

7590 11/10/2003

Kirkpatrick & Lockhart LLP
 Henry W. Oliver Building
 535 Smithfield Street
 Pittsburgh, PA 15222

EXAMINER

ART UNIT

PAPER NUMBER

DATE MAILED 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

90006742.111003

PTO-90C (Rev. 10/03)

Order Granting / Denying Request For Ex Parte Reexamination	Control No.	Patent Under Reexamination	
	90/006,742	6181990	
	Examiner Yonel Beaulieu	Art Unit 3661	

-The MAILING DATE of this communication appears on the cover sheet with the correspondence address-

The request for *ex parte* reexamination filed 12 August 2003 has been considered and a determination has been made. An identification of the claims, the references relied upon, and the rationale supporting the determination are attached.

Attachments: a) ☐ PTO-892, b) ☒ PTO-1449, c) ☐ Other: _____

1. ☒ The request for *ex parte* reexamination is GRANTED.

RESPONSE TIMES ARE SET AS FOLLOWS:

For Patent Owner's Statement (Optional): TWO MONTHS from the mailing date of this communication (37 CFR 1.530 (b)). EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).

For Requester's Reply (optional): TWO MONTHS from the date of service of any timely filed Patent Owner's Statement (37 CFR 1.535). NO EXTENSION OF THIS TIME PERIOD IS PERMITTED. If Patent Owner does not file a timely statement under 37 CFR 1.530(b), then no reply by requester is permitted.

2. ☐ The request for *ex parte* reexamination is DENIED.

This decision is not appealable (35 U.S.C. 303(c)). Requester may seek review by petition to the Commissioner under 37 CFR 1.181 within ONE MONTH from the mailing date of this communication (37 CFR 1.515(c)). EXTENSION OF TIME TO FILE SUCH A PETITION UNDER 37 CFR 1.181 ARE AVAILABLE ONLY BY PETITION TO SUSPEND OR WAIVE THE REGULATIONS UNDER 37 CFR 1.183.

In due course, a refund under 37 CFR 1.26 (c) will be made to requester:

a) ☐ by Treasury check or,

b) ☐ by credit to Deposit Account No. _____, or

c) ☐ by credit to a credit card account, unless otherwise notified (35 U.S.C. 303(c)).

cc: Requester (If third party requester)

U.S. Patent and Trademark Office
PTOL-471 (Rev. 04-01)

Office Action in Ex Parte Reexamination

Part of Paper No. 5

Application/Control Number: 90/006,742
Art Unit: 3661

Page 2

Decision on Request for Reexamination of U.S. Patent No. 6,181,990 filed 12 August 2003.

A substantial new question of patentability affecting claims 1 - 4, 6, 7, 15 - 24 and 33 of U.S. Patent No. 6,181,990 to Grabowsky et al. is raised by the request for reexamination in view of U.S. Patent No. 6,047,165 to Wright et al. issued 4 April 2000.

A substantial new question is also raised with regard to claims 1, 4, 6, 7, 15 - 20 and 33 of Grabowsky et al. ('990) in view of U.S. Patent No. 5,351,194 to Ross et al..

Moreover, a new question of patentability affecting claims 2, 3, 21, and 22 of Grabowsky et al. ('990) is raised when Ross et al. ('194) is taken in combination with Miller et al. (5,652,717) and Bannister et al. (5,943,399).

The request indicates that Wright et al. ('165) anticipates claims 1 - 4, 6, 7, 15 - 24, and 33 of Grabowsky et al. in that the same language (limitations) to effect aircraft data transmission in a cellular infrastructure via the Internet is claimed. It is also the requester's belief that substantial new questions of patentability are raised by Ross et al. ('194) alone and Ross et al. ('194) is taken in combination with Miller et al. ('717) and Bannister et al. ('399) in that Ross ('194) shows the cellular infrastructure while Miller ('717) and Bannister show acquisition of data from an aircraft and provide for a telecommunication network and Internet communication.

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Art Unit: 3661

It appears that the patent to Wright et al. ('165) raises a substantial new question of patentability to claims 1 - 33 to Grabowsky et al. (6,181,990). A reasonable examiner would consider the teaching of the Wright et al. Patent as important in deciding whether or not the claims are patentable. Similarly, Ross et al., Miller et al. and Bannister would be considered important for a reasonable examiner to consider in determining patentability of the claims of Grabowsky et al.. Accordingly, the Wright et al., Ross, Miller and Bannister references raise ~~new~~ substantial new questions of patentability as to claims 1 - 33 which have not been decided in a previous examination of the Grabowsky patent.

All claims will be examined. (MPEP 2216).

Extension of time under 37 CFR § 1.136(a) will not be permitted in these proceedings because such a provision applies only to "an applicant" and not to parties in a reexamination proceeding.

90006742-11006
EO 1.1-2479006

Application/Control Number: 90/006,742
Art Unit: 3661

Page 4

The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to appraise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 6,181,990 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly appraise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

90006742 111000

Y. BEAULIEU
Primary Examiner
AU 3661
(703) 305-4072
PRIMARY EXAMINER

FORM PTO-1449
LIST OF PATENTS AND
INFORMATION DISCLOSURE STATEMENT

ATTORNEY DOCKET NO.: GCSD-1360 (51299)

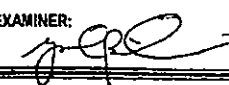
REEXAMINATION REQUEST FOR
 U.S. PATENT NO. 6,181,889 TO GRABOWSKY ET AL.

REFERENCE DESIGNATION		U.S. PATENT DOCUMENTS					
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING IF APPROPRIATE
1X	AA	5,351,184	09/27/84	Ross et al.	364	449	
	AB	5,463,656	10/31/95	Polivka et al.	375	200	
	AC	5,652,717	07/29/97	Miller et al.	364	578	
	AD	5,943,399	08/24/99	Bannister et al.	379	88.17	
	AE	6,047,165	04/04/00	Wright et al.	455	66	
	AF	6,104,914	08/15/00	Wright et al.	455	66	
	AG	6,108,523	08/22/00	Wright et al.	455	66	
	AH	6,154,637	11/28/00	Wright et al.	455	66	
	AI	6,308,045	10/23/01	Wright et al.	455	66	
	AJ						
	AK						
	AL						
	AM						
	AN						

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FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION Yes - No
	AO						
	AP						

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)		
AQ		
AR		
AS		

EXAMINER: 	DATE CONSIDERED: 17 October 2003
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; * Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	



4-21-05

PC-7000

Attorney Docket No. 98118

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of

Examiner: Yonel Beaulieu

U.S. Patent No. 6,181,990

Art Unit: 3661

Control No.: 90/006,742

Title: AIRCRAFT FLIGHT DATA

Filing Date: August 12, 2003

ACQUISITION AND TRANSMISSION

Inventors: Grabowsky et al.

SYSTEM

INFORMATION DISCLOSURE STATEMENT

April 20, 2005

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1950

Sir:

This paper is submitted in the above-referenced reexamination of U.S. Patent No. 6,181,900 (hereinafter "the '900 patent"). Pursuant to 37 C.F.R. § 1.555, Patent Owner hereby

"Express Mail" mailing label number EU150835283US

Date of Deposit April 20, 2005

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Commissioner for Patents, P.O. Box 1450-Alexandria, VA 22313-1450

PI-1350178 v1

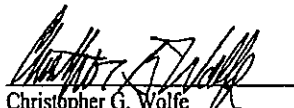
Attorney Docket No. 98118

advises the United States Patent and Trademark Office of the reference(s) listed on the accompanying Form PTO SB/08A "Information Disclosure Citation" (hereinafter "the references").

This submission of the references should not be considered an admission that the references are material to the claims of the '540 patent. Patent Owner merely submits the references for the Examiner's consideration in the reexamination.

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Respectfully submitted,


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Registration No. 56,264

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- 2 -



PTO/SB/08A (10-01)

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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Control No.	90/006,742
		Filing Date	August 12, 2003
		First Named Inventor	Grabowsky
		Art Unit	3661
		Examiner Name	Yonel Beaulieu
Sheet 1 of 1	Attorney Docket Number	98118	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	Document Number Number - Kind Code ³ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,359,446	10-25-1994	Johnson et al.	
		4,642,775	02-10-1987	Cline et al.	
		4,872,182	10-03-1989	McRae et al.	
		5,445,347	08-29-1995	Ng	
		4,939,652	07-03-1990	Steiner	

FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No.	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	†
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)					
		EP 0 407 179 A1		01-09-1991	Barry et al.		
		GB 2 278 006 A		09-14-1994	Sanders et al.		
		EP 0 408 094 B1		07-09-1997	Starr et al.		
		EP 0 774 274 B1		05-21-1997	Lu		

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issues number(s), publisher, city and/or country where published	T ⁷
		Airlines Electronic Engineering Committee, ARINC Characteristic 751, "Gate-Aircraft Terminal Environment Link (Galelink)-Aircraft Side", Published January 1, 1994	
		Airlines Electronic Engineering Committee, Specification 832, "Gate-Aircraft Terminal Environment Link (Galelink)-Ground Side", Published December 30, 1994	

Examiner Signature	Date Considered
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1350111



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FAX

Date • May 12, 2005

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Name	Company	Phone	Fax
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From • Christopher G. Wolfe
Secretary • Beth Ann Staub
Our File No.
98118

Phone • 412.355.6798
Phone • 412-355-8219

Client/Matter Name	Client/Matter Number	Attorney Number
Teledyne	0216786.0124	0694

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Attorney Docket No. 98118

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	Examiner: Yonel Beaulieu
U.S. Patent No. 6,181,990	Art Unit: 3661
Control No.: 90/006,742	Title: AIRCRAFT FLIGHT DATA
Filing Date: August 12, 2003	ACQUISITION AND TRANSMISSION
Inventors: Grabowsky et al.	SYSTEM

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

May 12, 2005

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1950

Sir:

This paper is submitted in the above-referenced reexamination of U.S. Patent No.
6,181,990 (hereinafter "the '990 patent"). Pursuant to 37 C.F.R. § 1.555, Patent Owner hereby

Certificate of Transmission

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Patricia A. Mack

PT-1365112 v1

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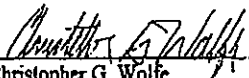
Attorney Docket No. 98118

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Respectfully submitted,


Christopher G. Wolfe
Registration No. 56,264

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- 2 -

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PTO/SB/08A (10-01)

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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known	
		Control No.	90/006,742
		Filing Date	August 12, 2003
		First Named Inventor	Grabowsky
		Art Unit	3661
		Examiner Name	Yonel Beaulieu
Sheet 1 of 1	Attorney Docket Number	98118	

Examiner Initials*	Cite No.	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
		5,761,625	06-02-1998	Honcik et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ³
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¹Applicant's unique citation designation number (optional). ²See Kind Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office (s) issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

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Attorney Docket No. 98118

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Recexamination of	Examiner: Yonel Beaulieu
U.S. Patent No. 6,181,990	Art Unit: 3661
Control No.: 90/006,742	Title: AIRCRAFT FLIGHT DATA
Filing Date: August 12, 2003	ACQUISITION AND TRANSMISSION
Inventors: Grabowsky et al.	SYSTEM

CERTIFICATE OF SERVICE

May 12, 2005

Commissioner for Patents
P. O. Box 1450
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Sir,

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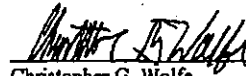
PI-1365260 v1

21.6-00 2005 05/12 THU 15:29 [TX/RX NO 5184] @019

Attorney Docket No. 98118

attorney for Harris Corporation, Third Party Requestor, this 12th day of May, 2005, by mailing
the same via United States first class mail, postage prepaid, addressed as follows:

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- 2 -

21.6-00 2005 05/12 THU 15:29 [TX/RX NO 5184] @020



US005761625A

United States Patent [19]

Honcik et al.

[11] Patent Number: **5,761,625**[45] Date of Patent: **Jun. 2, 1998****[34] RECONFIGURABLE ALGORITHMIC NETWORKS FOR AIRCRAFT DATA MANAGEMENT****[75] Inventors:** David B. Honcik, Kirkland; Martin T. Shetter, Bellevue, both of Wash.**[73] Assignee:** AlliedSignal Inc., Morristown, N.J.**[21] Appl. No.:** 473,652**[22] Filed:** Jan. 7, 1995**[51] Int. Cl.:** G06G 7/76**[52] U.S. Cl.:** 701/14; 340/963; 364/550**[58] Field of Search:** 364/424.06, 424.01, 364/433, 434, 427, 430, 351.01, 428, 350, 424.03, 424.04, 439, 435, 461; 340/973, 975, 968, 963, 969, 970, 971; 244/186, 177, 194, 195, 76 R, 17.13, 181; 360/5; 701/14, 24**[56] References Cited****U.S. PATENT DOCUMENTS**

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5,493,497	2/1996	Benn	364/424.013

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0 431 662 A 1	6/1991	European Pat. Off.	G050 1/00
2 667 171 A 1	3/1992	France	G06F 9/06
43 10 615 A 1	10/1994	Germany	

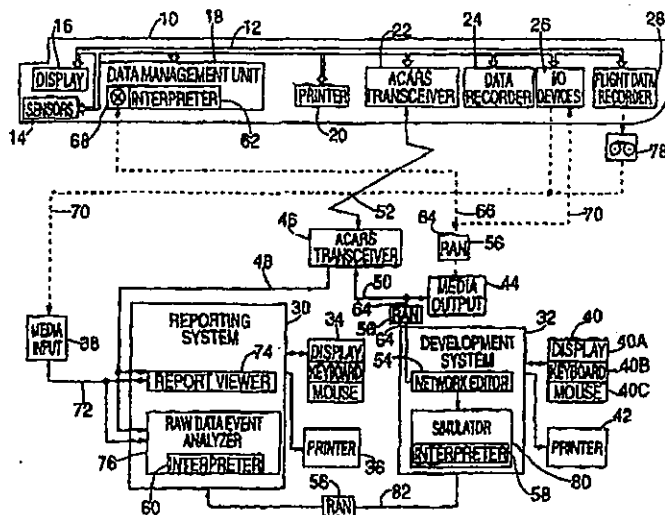
OTHER PUBLICATIONS

"Q'Nal: A Portable Interpreter For The Nested Interactive Array Language, Nial"—Software Practice & Experience, vol. 19, No. 2, Feb., 1989 (111-126).

Primary Examiner—Jacques H. Louis-Jacques**[57] ABSTRACT**

An aircraft data management system which uses a reconfigurable algorithmic network to define operations on a set of flight data along with interpreters to interpret the flight data in accordance with the reconfigurable algorithmic network. The reconfigurable algorithmic network accepts flight data from a variety of sources. The reconfigurable network defines functional relationships between and performs operations on the various flight data. The flight data sources and the relationships therebetween can be configured by the user. The aircraft data management system can be used with a variety of computers and operating systems without reprogramming while maintaining certification requirements.

23 Claims, 6 Drawing Sheets



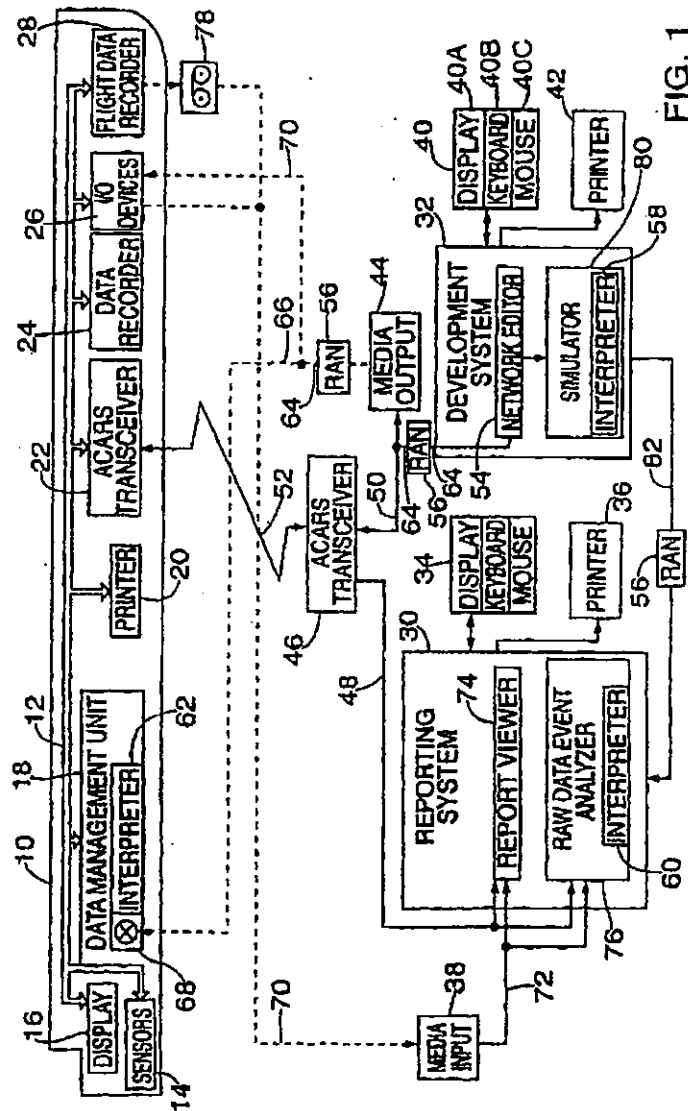
21.6-00 2005 05/12 THU 15:28 [TX/RX NO 5184] 005

U.S. Patent

Jun. 2, 1998

Sheet 1 of 6

5,761,625



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U.S. Patent

Jun. 2, 1998

Sheet 2 of 6

5,761,625

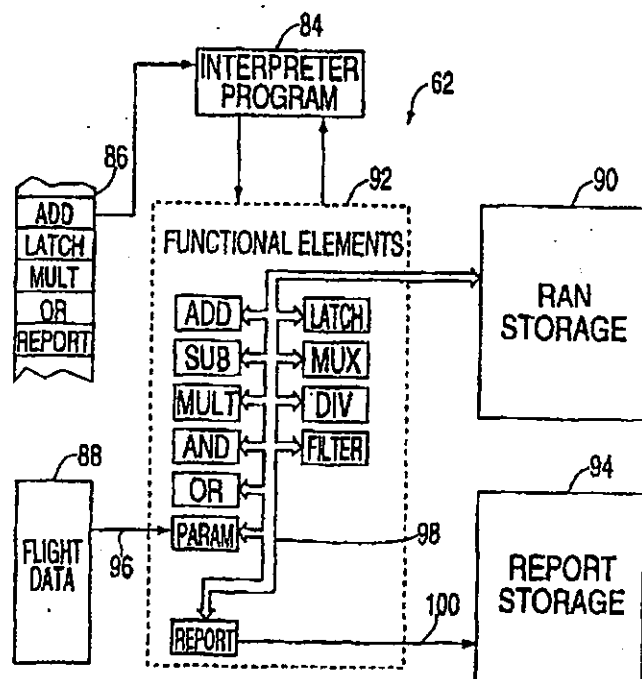


FIG. 2

21.8-00 2005 05/12 THU 15:29 [TX/RX NO 5184] @087



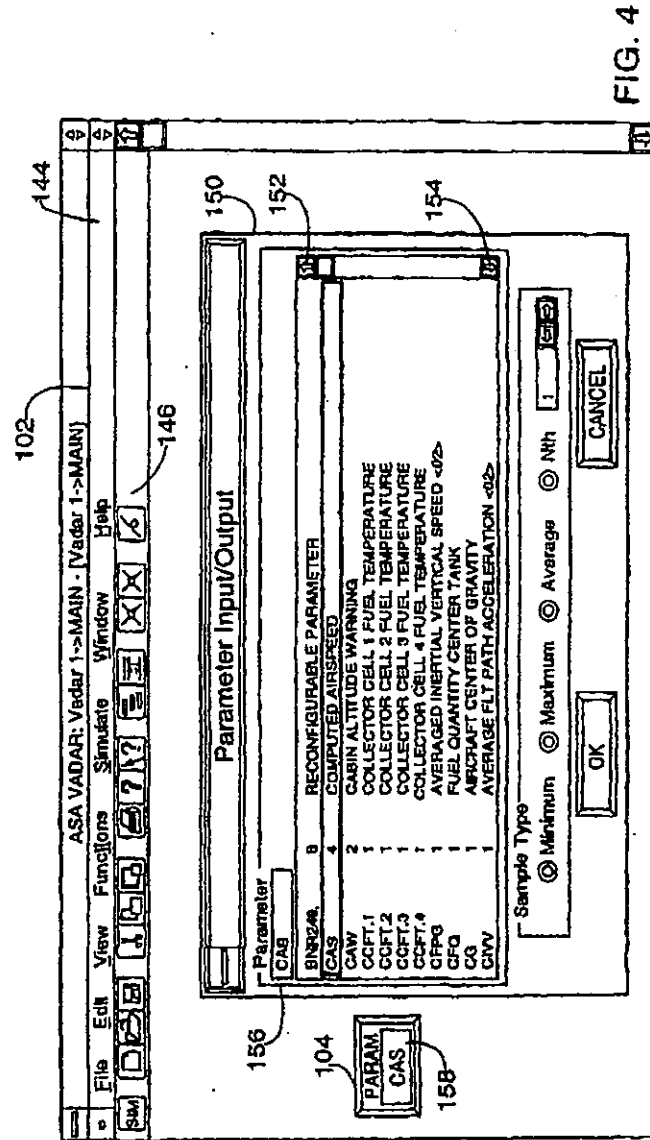
TDY0002069

U.S. Patent

Jun. 2, 1998

Sheet 4 of 6

5,761,625



21.6-00 2005 05/12 THU 15:29 [TX/RX NO 5184] 009

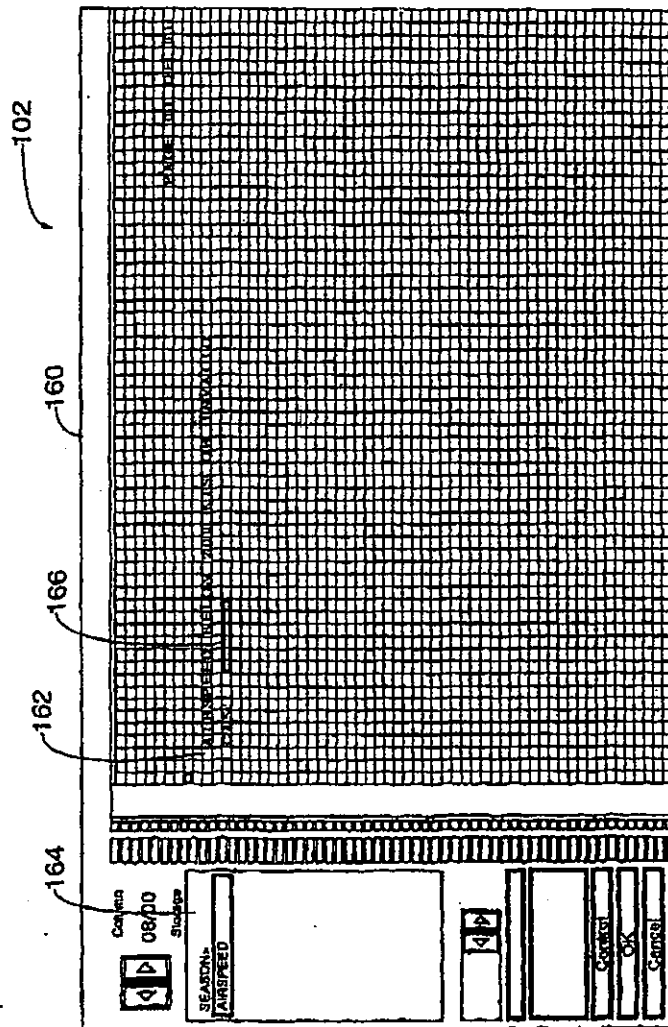
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FIG. 5



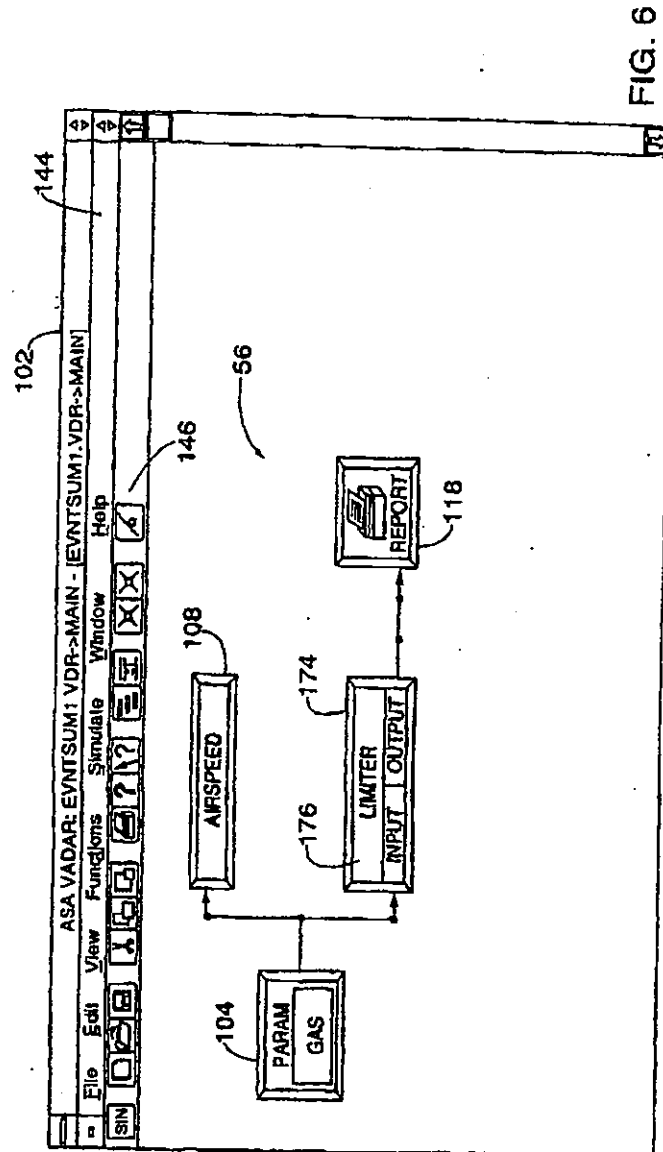
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U.S. Patent

Jan. 2, 1998

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RECONFIGURABLE ALGORITHMIC NETWORKS FOR AIRCRAFT DATA MANAGEMENT

FIELD OF THE INVENTION

The invention generally relates to the field of aircraft flight data systems and in particular to flight data management systems for use with commercial aircraft.

BACKGROUND OF THE INVENTION

The advent of digital flight data systems, which can utilize as many as 20,000 different flight parameters from sensors in a commercial aircraft, has provided aircraft operators as well as flight crews with the opportunity to obtain data on a wide variety of operational, maintenance and flight safety matters. The availability of this data has proven to be very useful in the operation of commercial aircraft. However, different operational groups within an airline frequently have different requirements as far as types of flight data that they find useful as well as the manner in which the data is analyzed, displayed and reported. For example, a flight crew would find data related to aircraft and altitude particularly useful whereas maintenance personnel would be more interested in data related to engine and electrical systems. In addition each airline tends to have its own unique requirements and uses for flight data.

Because of the sheer magnitude of flight data that is available and the differing requirements of airlines as well as groups within the airlines, providing this data in a useful form has become an expensive and time consuming task. Currently, not only is it necessary to create separate data handling computer programs for each group utilizing this flight data, but this process is further complicated by the fact that different types of computer hardware are often used by these groups. As an example, data management units located in aircraft which operate off an ARINC data bus normally utilize an entirely different microprocessor and operating system than ground based workstations that typically use a personal computer with the Windows® operating system. To further complicate the situation, it is a requirement of most governmental flight regulation authorities, such as the U.S. Federal Aviation Administration, that software used with commercial aircraft must be officially certified. Not only must the original programs be certified, but in most instances any time any change is made to a program, the program must be recertified. This substantially increases the expense as well as the time required to create and modify data management software for use with flight data.

SUMMARY OF THE INVENTION

It is therefore an object of the invention to provide an aircraft data management system that can be used with a variety of computers and operating systems without reprogramming while maintaining certification requirements.

It is a further object of the invention to provide an aircraft data management system which uses a reconfigurable algorithmic network to define operations on a set of flight data along with interpreters to interpret the flight data in accordance with the reconfigurable algorithmic network.

It is an additional object of the invention to provide an aircraft data management system having a reconfigurable algorithmic network where individual operations on flight data are represented by functional elements connected together so as to define the operational relationships between the functional elements.

Another object of the invention is to provide a development system having a display for use with an aircraft data management system for developing reconfigurable algorithmic networks where functional elements of the network are represented on the display by element symbols and are connected together by data lines which represent the functional relationships between the functional elements in the network. The color of the data lines can be used to represent data types. Various element symbols can be used to represent flight data parameter sources, data and logic operations, timer and counter operations and report generators. Construction of the network can be facilitated by displaying a palette of element symbols and using a mouse for point and click operations to select element symbols for the network from the palette and connecting the selected symbols by drawing data or connection lines between the symbols.

A still further object of the invention is to provide a simulator having an interpreter and a source of simulated flight data for use with an aircraft data management system that utilizes reconfigurable algorithmic networks. The simulator can form part of a development system and be used in development and testing of reconfigurable algorithmic networks by utilizing the interpreter to interpret a network using the simulated flight data.

An additional object of the invention is to provide an aircraft data management system that uses a hierarchy of reconfigurable algorithmic networks where flight data operations are represented by functional elements in a network and compressed reconfigurable algorithmic networks are also represented by functional elements in the network. Each reconfigurable algorithmic network can contain a number of compressed reconfigurable algorithmic networks which in turn can contain other compressed reconfigurable algorithmic networks represented as functional elements so that a hierarchy of networks is formed.

Another object of the invention is to provide an aircraft data management system that utilizes a number of different reconfigurable algorithmic networks having functional elements that represent data operations where the reconfigurable algorithmic networks can be interpreted on different types of computers with interpreters written for each of the computers. The data management system can include an aircraft data management unit with a first one of the reconfigurable algorithmic networks for generating flight data reports for the flight crew and a ground based report system having a second one of the reconfigurable algorithmic networks for generating operational and maintenance data. The system can also include a radio transmission system, such as ACARS, for transmitting flight data or reports generated by a reconfigurable algorithmic network from the aircraft in flight to the report system. The radio transmission system can also be used to transmit reconfigurable algorithmic networks to the aircraft's data management unit. In addition, flight data can be transferred to the report system by other types of media including floppy disks or flight data recorder tapes.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating an aircraft data management system according to the invention;

FIG. 2 is flow diagram illustrating the operation of an interpreter used in the data management system of FIG. 1;

FIG. 3 is a view of a screen display of a reconfigurable algorithmic network for use with the data management system of FIG. 1;

FIG. 4 is a screen display of a parameter input/output window for use in the development of the reconfigurable algorithmic network of FIG. 3;

DRAWING FIG.

DRAWING FIG.

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FIG. 5 is a screen display of a report format window for use in the development of the reconfigurable algorithmic network of FIG. 3; and

FIG. 6 is a screen display of the reconfigurable algorithmic network of FIG. 3 illustrating the use of a compressed reconfigurable algorithmic network.

DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 provides, in block diagram form, an illustration of the preferred embodiment of an aircraft data management system for use with an aircraft 10 according to the invention. As is typical of modern commercial aircraft, a digital data bus 12, such as the type of data bus utilized in connection with the ARINC 429 Digital Information Transfer System, is used to transfer data to and from various types of equipment installed in the aircraft 10. Representative examples of this equipment are shown in the aircraft 10 of FIG. 1 and include a set of sensors, represented by a block 14, for generating flight data such as airspeed, altitude, aircraft attitude, control surface positions and engine conditions. Other types of equipment connected to the data bus 14 can include a cockpit display 16, a data management unit 18 for monitoring and collecting data as part of an aircraft condition monitoring system, a printer 20 for providing the flight crew with printed reports and other types of communications, an ACARS (ARINC Communications Addressing and Reporting System) transceiver 22 for data communication with the ground, a data recorder 24 for recording flight data generated by the sensors 14, a set of input/output devices 26 that can receive various types of data transfer media such as floppy disks, tape cassettes or PCMCIA cards for transferring information from and to the aircraft 10, and a crash survivable flight data recorder 28.

The ground based portion of the data management system of FIG. 1 includes a reporting system 30 and a development system 32. The reporting system 30, which can be implemented in a personal computer or a computer work station, includes a user interface 34, typically having a monitor display, a keyboard and a mouse, a printer 36 and a media input device 38 for receiving various types of data media such as floppy disks, tape cassettes or PCMCIA cards. The development system 32, which also can be implemented in a personal computer or a computer work station preferably using the Windows® operating system, includes a user interface 40 having a monitor display 40A, a keyboard 40B and a mouse 40C along with a printer 42 and a media output device 44 similar to the media input device 38. Additionally included in the ground based portion of the data management system is an ACARS transceiver 46 which is shown in this embodiment as being connected to both the reporting system 30 and the development system 32 as indicated by a pair of lines 48 and 50 respectively. One of the purposes of the ACARS transceiver 46 is to communicate with the aircraft based ACARS transceiver 22 as indicated by a line 52.

In order to provide for efficient and flexible data management of the some 20,000 different types of flight data that can be produced by the sensors 14 on modern commercial aircraft, the development system 32 contains a network editor software program, indicated by a block 54, which is used to develop a series of reconfigurable algorithmic networks (RANs) as graphically represented in FIG. 1 by blocks 56. One of the purposes of the RANs 56 is to define a set of operations to be performed on selected flight data obtained from the sensors 14 and to format reports that will

display the results of the operations on the data once it has been processed. Operation of the network editor 54 in the creation of the RANs 56 is explained in detail in connection with FIGS. 3-6. After the RAN 56 has been created, it is interpreted in conjunction with the selected flight data by an interpreter program such as a development system interpreter 58 located in the development system 32, a reporting system interpreter 60 located in the reporting system 30 or a data management unit interpreter 62 located in the data management unit 18. In this embodiment of the invention shown in FIG. 1 each of the interpreters 58-62 are capable of interpreting the RANs 56 but can be designed to run on different computer hardware systems. For example, the reporting system interpreter 60 could be written to run on an Intel microprocessor using a Windows operating system while the data management unit interpreter 62 would be written to run on an Intel i960 microprocessor in the data management unit 18.

One of the primary advantages of this approach is that the RANs 56, which define data management operations, are hardware independent. Also, this approach can substantially reduce certification requirements because once the interpreters 58-62 are certified for particular computer systems such as the data management unit 18, and because merely interpreting the RAN 56 does not affect the database on the aircraft 10, it should not be necessary to obtain recertification every time the RAN 56 is modified or a new RAN 56 is created.

There are a wide variety of uses for the data management system of FIG. 1. For example, one of the RANs 56 can be created in the network editor 54 and transmitted to the media output device 44 via a line 64 and then, as indicated by a dashed line 66, hand carried on a floppy disk or tape cassette to the aircraft 10 where it is loaded through a RAN loader 68 directly into the data management unit 18 or alternatively loaded into the I/O device 26 as indicated by a dashed line 70. If the aircraft 10 is in flight, the RAN 56 can be sent to the ACARS transceiver 46 over the line 50 and then transmitted to the ACARS transceiver 22. After the RAN 56 is interpreted by the interpreter 62, the resulting report can be printed out by the printer 20, displayed to the cockpit crew on the display 16, recorded in the data recorder 24, placed on data media in the I/O device 26 or transmitted to the ACARS transceiver 46 from the ACARS transceiver 22 depending upon the nature and the purpose of the report. If the report is placed on data media in the I/O device 26, it can then later be hand carried to the media input device 38, as indicated by a dashed line 70 and transmitted via a line 72 to a report viewer program 74 in the reporting system 30 for display on the user interface 34 or printing on the printer 36. In the event the aircraft 10 is airborne, the report can be transmitted via the ACARS transceiver 46 to the report viewer 74 over the line 48.

The data management system of FIG. 1 can also make use of raw flight data from the sensors 14 by transmitting the raw flight data by means of the ACARS transceivers 22 and 46 directly to a raw data event analyzer 76 in the reporting system 30 where the RAN 56 is interpreted by the interpreter 60 using the raw flight data as data. The resulting report can then be displayed on the user interface 34 or printed out on the printer 36. As an alternative, the raw flight data can be loaded on to data media in the I/O device 26 and hand carried, as suggested by the dashed line 70, to the media input device 38 where it is subsequently transferred to the raw data analyzer 76 over line 72. It is even possible to analyze data from the crash survivable flight data recorder 28 by transferring a cassette 78 from the recorder 28 to the

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media input device 38 as indicated by the dashed line 70 for analysis by the RAN 56 as interpreted by the interpreter 60.

To aid in the development of the RANs 56, the development system 32 preferably contains a simulator program 80 that includes a data base of simulated flight data (not shown.) The simulator interpreter 58 can be used to test and debug the RAN 56 as it is being developed. It should also be noted that the development system 32 can distribute the RANs 56 directly to one or more of the reporting systems 30 by using a digital network such as a local area network as indicated by a line 82.

Operation of the of the interpreters 58-62 will be described in connection with the flow diagram of FIG. 2. Preferably, all of the interpreters 58-62 will be essentially the same program written in the C language and only modified to the extent necessary to run on different types of computer hardware. Since all of the interpreters 58-62 operate in the same manner, the flow diagram of FIG. 2 will be discussed in terms of the interpreter 62 installed in the data management unit 18. It should be noted also that the interpreter 62 is created using conventional and well known interpreter programming techniques such as used in writing Basic interpreters. The interpreter 62 includes a interpreter program 84 which accepts the RAN 56 in the form of a RAN database 86. In this case the RAN database 86 is composed of a series of codes representing functional elements which are identified in the database 86 shown in FIG. 2 as an ADD, a LATCH, a MULTIPLY, an OR gate and a REPORT. The functional elements which represent various types of operations such as operations on flight data are more fully described in connection with FIG. 3. Included in the description of the interpreter 62 in FIG. 2 is a source of flight data 88, that in this case could be, for example, the aircraft data bus 12, and a RAN storage area 90 that would normally be located in a random access memory. In addition, a group of computer routines for executing functional elements identified as the ADD function through the REPORT function is located in memory as indicated in a block 92. A report storage area 94 is also provided in memory for storing report data generated by the interpreter 62.

During the interpreting operation the interpreter 62 under control of the program 84 receives the function element codes in sequence from the database 86 and selects the corresponding computer routines for the corresponding functional elements from memory 92 for execution. If the selected computer routine is for example the ADD function and requires flight data from the flight data source 88, this data is obtained by the PARAM routine from the flight data source 88 as indicated by a line 96. As indicated by a box type line 98, which generally represents data and logic flow, this flight data is operated on by the ADD routine and the result is stored in the RAN storage memory 90. The RAN storage 90 is also used to store other types of RAN information such as RAN connection lines that are used to connect functional elements in the RAN 56 which are described in more detail in connection with FIG. 3. In many cases the last function to be performed on the RAN 56 by the interpreter 62 is the REPORT function resulting in the REPORT routine in 92 selecting the appropriate information from the RAN storage 90, formatting it and transferring it as indicated by a line 100 to the report storage 94 where it becomes, for example, available for printing out on the aircraft printer 20 or displaying on the display 16. In this manner, the interpreter program 84 responds to the sequence of the RAN codes 86 to perform the data management operations as defined by the RAN 56.

FIG. 3 shows an example of one the RANs 56 as displayed on the display 40A of the development system 32.

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In the preferred embodiment of the invention the network editor 54 is implemented using the Microsoft Windows operating system and makes use of the point and click capabilities of the mouse 48C. Although the preferred embodiment of the network editor 54 is described in terms of a Windows environment, it will be appreciated that it can be implemented using other operating systems that employ graphical interfaces such as the Apple Macintosh operating system. Here, the RAN 56 is shown as part of a network editor screen 102 which can be generated by the network editor 54. In order to illustrate the operation of the data management system, the RAN 56 shown in FIG. 3 has been constructed to exemplify an elementary operation on selected flight data. The RAN 56 includes a group of functional element symbols 104-118 which represent the type of functional element routines shown in 92 of FIG. 2. In the RAN 56 of FIG. 3 these functional element symbols are: the PARAM symbol 104 which represents the flight data parameter airspeed as indicated by the letters CAS; the CONSTANT symbol 106 which represents a constant value equal to an airspeed of 200.00 knots; the STORAGE symbol 108 for storing the constant value of airspeed; the COMPARE symbol 110 for comparing the values of two types of data; the SPLITTER symbol 112 for splitting a data input into a first output representing the value of the data and a second output representing the validity of the data; the INVERTER symbol 114 for inverting boolean logic signal; the OR gate symbol 116; the LEADING EDGE DETECTOR symbol 118 for determining if boolean data is changing from False to True; and the REPORT symbol 120 for generating a report.

The functional element symbols 104-120, as shown in FIG. 3, are connected by a set of connection lines 122-132. The purpose of the connection lines 122-132 is to provide a graphical representation of logic and data flow between the functional element symbols 104-120. In the preferred embodiment of the invention color is used to represent the characteristics of the connection lines 122-132. For example, the connection lines 122 and 124 that connect the PARAM symbol 104 and the CONSTANT symbol 106 with the STORAGE symbol 108 and the SPLITTER symbol 110 are red which designate that floating point data values along with a boolean data validity signal are being transferred. By contrast, the connection lines 126-132 that connect the function element symbols 110-120 are black which denotes that boolean true/false or validity signal is being transferred. In the drawing of FIG. 3, the red connection lines 122 and 124 are indicated by solid black lines and the black connection lines 126-132 are indicated by dotted lines. In addition to red and black, other colors can be used to indicate different types of data such as blue for integer values and yellow for character strings. Each of the function element symbols 104-120 has at least one input port or one output port or both input and output ports to which the connection lines 122-132 can be drawn. For example, the PARAM symbol 104 has a single output port 134, the COMPARE symbol 110 has a pair of input ports 136 and 138 along with an output port 140 and the REPORT symbol 120 has a single input port 142. Preferably, the network editor program 54 will only permit connection lines such as 122-132 to be drawn between function element symbols such as 104-120 that have the capability of receiving or processing the type of data or information indicated by the color of the lines.

Along with a conventional Windows type tool bar 144 and a button bar 146 for editing and control functions, the network editor screen 102 of FIG. 3 includes a symbol palette 148 which includes at least the most commonly used functional element symbols such as symbols 104-120. One

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of the advantages of the symbol palette 108 is that it makes it particularly convenient to construct a RAN such as the RAN 56 by using the mouse 40A to drag and drop the functional element symbols 104-120 from the palette 108 to the desired locations on the screen 102. After the functional element symbols 104-120 are placed on the screen 102, the mouse 40A can also be used to draw the connection lines 122-123.

The object of the particular data management function defined by the RAN 56 is shown in FIG. 3 to generate a report when the airspeed of the aircraft 10 drops below 200 knots or if the altimeter signal becomes invalid. The data management operation as defined by the RAN 56 starts with the input of airspeed as indicated by the PARAM symbol 104 which is then transmitted as shown by the connection line 122 to storage as indicated by the STORAGE symbol 108 and to a signal SPLITTER represented by the SPLIT-TER symbol 112. Along with airspeed, a constant representing 200 knots is applied, as indicated by the connection line 124, from a constant signal source identified by the CON-STANT symbol 106 to a comparator as represented by the COMPARE symbol 110. If the airspeed drops below 200 knots, the comparator as indicated by the connection line 128 will output a boolean true signal to an OR gate cor-responding to the OR gate symbol 116. The splitter cor-responding to the SPLITTER symbol 112 will output, as indicated by the connection line 126, a boolean validity signal representing the validity portion of the airspeed signal to an inverter corresponding to the INVERTER symbol 114. The inverted validity signal (as indicated by the connection line 127) is also applied to the OR gate and the logic output of the OR gate represented by the OR gate symbol 116 is then applied to the leading edge detector corresponding to the DETECTOR symbol 118. As a result, if either the airspeed drops below 200 knots or if the airspeed validity becomes invalid, the detector will apply a boolean true signal as indicated by the connection line 132, to the report generator represented by the REPORT symbol 120. The report generator will then generate a report which indicates that either of these two events have happened and what the airspeed was when it happened using the data store repre-sented by the STORAGE symbol 108.

As further illustration of the features of the network editor 54, FIG. 4 provides a partial view of the screen 102 during the development of the RAN 56. In this case, after the selection of the PARAM symbol 104 from the symbol palette 148, the symbol 104 can be double clicked using the mouse 40A to display a Parameter Input/Output display window 150 which displays all of the night data parameters which are available to the RAN 56. The night data parameters can be scrolled in the window 150 using a pair of scroll buttons 152 and 154. The desired parameter, in this case computed airspeed as shown by the shaded portion 156 of the window, is selected by the mouse 40A for the PARAM symbol 104 and a corresponding designation "CAS" 158 is displayed in the PARAM symbol 104.

Similarly, as illustrated in FIG. 5, by double clicking on the REPORT symbol 120 a report format window 160 is displayed. Here, the keyboard 40C can be used to type in the text of the report as indicated at 162. Displayed in a list 164 in the left hand portion of the report format window 160 are the flight parameters or other values stored by the RAN 66 such as airspeed stored in the STORAGE symbol 108. By highlighting the desired value in the list 164, and then designating a location in the report format using the mouse 40C, this value of flight parameter can be placed in the report as shown, for example, by a shaded word "airspeed" 166 in the report format 160.

Another very significant feature of the preferred embodiment of the invention, which is illustrated in FIGS. 3, 6 and 7, is the ability of the network editor 54 to compress a RAN into a functional element in a higher level RAN. With reference to the RAN 56 in FIG. 3, one method of compressing a RAN is to drag the mouse 40C over the function element symbols 106, 110, 114, 116 and 118 that are to be included in a compressed RAN indicated by 168. A dashed outline 170 surrounding the compressed RAN 168 will be displayed on the screen 192 along with a collapse region option box 172. If the compressed RAN 168 within the dashed line 170 is satisfactory, then the "yes" button in the option box 172 is clicked and the RAN 56 is displayed on screen 192 in the form shown in FIG. 6. Here, the compressed RAN 168 is displayed as a functional element symbol 174 with a name "LIMITER" 176. In this manner, it is possible to construct a hierarchy of compressed RANs so that a very complex RAN can be displayed on one screen such as screen 192.

It will be appreciated that method of creating reconfigurable algorithmic networks. RANs 56, using the above-described visual programming techniques, which can be implemented using conventional Windows programming methods, provides a very powerful and flexible way of managing and using the large amounts of flight data that are available in commercial aircraft 10. Not only can RANs 56 be easily created and debugged, but they can be modified to suit new requirements with minimal effort. In addition, because the RANs 56 are interpreted, they can be executed on a variety of computer systems without reprogramming.

We claim:

1. A hardware independent data management system for use with aircraft comprising:

a) a plurality of flight data sources for generating a plurality of flight data:

b) a computer;

c) transmittal means for transmitting at least a portion of said flight data from said flight data source to said computer;

d) a reconfigurable algorithmic network, resident on said computer, that defines a set of predetermined operations on a predetermined set of said flight data, said reconfigurable algorithmic network including:

1) a plurality of functional elements, each of said functional elements defining one or more of said predetermined operations;

2) a data base, said data base including:
a) a plurality of codes defining one or more of said functional elements.

b) a plurality of computer routines for executing said functional elements, and

c) connection means for directing logic flow and data flow between said functional elements;

e) interpreter means, resident on said computer, for interpreting said set of flight data in accordance with said reconfigurable algorithmic network, said interpreter means including connection means for defining operational relationships between said functional elements, wherein said interpreter means receives said functional element codes from said data base and selects one of said computer routines; and

1) an input/output device for transferring information to and from the aircraft, said input/output device receiving one or more data transfer medium.

2. The system of claim 1 additionally including development means, having a display for developing said recon-

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figurable algorithmic network wherein said algorithmic network is visually represented on said display with a plurality of element symbols representing said functional elements and a plurality of connection lines representing said connection means.

3. The system of claim 2 wherein said development means includes a set of functional element symbols displayed on said display and user interface means for selecting said element symbols from said set of functional element symbols and for connecting said element symbols with said connection lines.

4. The system of claim 3 wherein said user interface means includes mouse means for selecting said element symbols from said set of functional element symbols and drawing said connection lines.

5. The system of claim 4 wherein said connection lines are represented by a plurality of colors on said display and wherein said colors represent data types.

6. The system of claim 4 wherein at least one of said functional element symbols is a aircraft parameter symbol which represents said flight data parameter.

7. The system of claim 6 wherein said user interface means includes parameter display means for displaying a list of said flight data parameters on said display and said display operator input means includes selection means for associating a parameter from said list with one of said element symbols on said display.

8. The system of claim 2 wherein said development means includes simulator means for simulating the operation of said reconfigurable algorithmic network.

9. The system of claim 8 wherein said simulator means includes a simulator interpreter for interpreting said reconfigurable algorithmic network.

10. The system of claim 9 wherein said simulator means includes a simulated set of flight data for use as said flight data parameters in interpreting said reconfigurable algorithmic network.

11. The system of claim 2 wherein said transmittal means includes a first communications transceiver in the aircraft a second communications transceiver connected to said development means for transmitting said reconfigurable algorithmic network via said first communications means to said data management unit.

12. The system of claim 1 wherein one of said functional elements is a report element which defines a format of a data report and when said data report is to be generated by interpreting said reconfigurable algorithmic network.

13. The system of claim 1 wherein said computer is located on the ground, one of said functional elements is a report element, and said interpreter generates a data report for at least a portion of said flight data.

14. The system of claim 13 wherein said transmittal means includes a first communications transceiver in the aircraft and a second transceiver connected to said computer for transmitting said portion of flight data from the aircraft to said computer.

15. The system of claim 1 wherein said system includes a data management unit located in the aircraft includes said interpreter and said reconfigurable algorithmic network, said transmittal means additionally transmits at least a portion of said flight data to said data management unit and said interpreter interprets said reconfigurable algorithmic network.

16. The system of claim 15 additionally including a display located on the aircraft and wherein said reprogrammable algorithmic network includes a report functional element and said interpreter generates a flight data display on said display.

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17. A data management system for use with aircraft having a plurality of flight data sources for generating a plurality of flight data, the data management system comprising:

a computer receiving at least a portion of the flight data from the flight data sources;

a reconfigurable algorithmic network, resident on said computer, that defines a set of predetermined operations on a predetermined set of said flight data, said reconfigurable algorithmic network including a plurality of functional elements, each of said functional elements defining at least one of said predetermined operations;

said predetermined operations including a compressed reconfigurable algorithmic network;

an interpreter, resident on said computer, said interpreter interpreting said set of flight data in accordance with said reconfigurable algorithmic network and defining operational relationships between said functional elements; and

a plurality of computer routines, resident on said computer, for executing said functional elements.

18. A data management system for use with aircraft comprising:

a plurality of flight data sources for generating a plurality of flight data;

a computer;

transmittal means for transmitting at least a portion of said flight data from said flight data sources to said computer;

a reconfigurable algorithmic network resident on said computer, that defines a set of predetermined operations on a predetermined set of said flight data, said reconfigurable algorithmic network including a plurality of functional elements wherein each of said functional elements defines at least one of said predetermined operations;

connection means for defining the operational relationships between said functional elements, and

a compressed reconfigurable algorithmic network; and interpreter means, resident on said computer, for interpreting said set of flight data in accordance with said reconfigurable algorithmic network wherein said compressed reconfigurable network is represented in said reconfigurable network as one of said functional elements.

19. A data management system for use with aircraft comprising:

a plurality of flight data sources for generating a plurality of flight data;

a computer;

transmittal means for transmitting at least a portion of said flight data from said flight data sources to said computer;

a reconfigurable algorithmic network, resident on said computer, that defines a set of predetermined operations on a predetermined set of said flight data, said reconfigurable algorithmic network including a plurality of functional elements wherein each of said functional elements defines at least one of said predetermined operations;

connection means for defining the operational relationships between said functional elements, and

a compressed reconfigurable algorithmic network; and interpreter means, resident on said computer, for interpreting said set of flight data in accordance with said

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reconfigurable algorithmic network wherein said reconfigurable algorithmic network includes a hierarchy of said compressed reconfigurable networks.

20. The method of claim 19, further comprising the step of transferring information to the aircraft using an input/output device, said input/output device receiving one or more data transfer medium.

21. The method of claim 19, further comprising the step of transferring information from the aircraft using an input/output device, said input/output device receiving one or more data transfer medium.

22. A method of data management for use with an aircraft computer, comprising the steps of:

receiving at the aircraft computer, a plurality of flight data from a plurality of flight data sources;

developing a reconfigurable algorithmic network resident on the computer, said reconfigurable algorithmic network defining a set of predetermined operations on a predetermined set of said flight data, said reconfigurable algorithmic network including a plurality of functional elements, each of said functional elements defining one or more of said predetermined operations; and

interpreting said set of flight data in accordance with said reconfigurable algorithmic network, said interpreting step including receiving said functional elements from

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said reconfigurable algorithmic network, defining operational relationships between said functional elements and selecting computer routines for executing said functional elements.

23. A hardware independent data management device for use with flight data received from a plurality of flight data sources, the device comprising:

a computer;

a reconfigurable algorithmic network resident on said computer, that defines a set of predetermined operations on a predetermined set of the flight data, said reconfigurable algorithmic network including a plurality of functional elements, each of said functional elements defining one or more of said predetermined operations on a predetermined set of the flight data;

an interpreter, said interpreter receiving said functional elements from said reconfigurable algorithmic network and defining operational relationships between said functional elements for interpreting said set of flight data in accordance with said reconfigurable algorithmic network; and

an input/output device for receiving the flight data and for transferring information to and from the aircraft.

* * * * *

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 5,761,625
DATED : June 2, 1998
INVENTOR(S) : Honecik et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 1, line 58: delete [defined] and substitute therefor --define--.

Claim 11, line 2 (column 9, line 38): after "aircraft" insert --and--.

Claim 12, line 3 (column 9, line 45): delete [when] and substitute therefor --wherein--.

Claim 15, line 2 (column 9, line 57): after "aircraft" insert --and--.

Claim 22, line 5 (column 11, line 16): after "network" insert --,--.

Signed and Sealed this
First Day of September, 1998

Attest:



BRUCE LEHMAN

Attesting Officer

Commissioner of Patents and Trademarks

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21.8-00 2005 05/12 THU 15:28 [TX/RX NO 5184] 018



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Client/Matter Name	Client/Matter Number	Attorney Number
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COMMENTS:

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PI-1365443 v1

21.8-00 2005 05/12 THU 15:37 [TX/RX NO 5185] 001

Exhibit C - Part 2
Page 148

TDY0002080

Attorney Docket No. 98118

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	Examiner: Yonel Beaulieu
U.S. Patent No. 6,181,990	Art Unit: 3661
Control No.: 90/006,742	Title: AIRCRAFT FLIGHT DATA
Filing Date: August 12, 2003	ACQUISITION AND TRANSMISSION
Inventors: Grabowsky et al.	SYSTEM

CERTIFICATE OF SERVICE

May 12, 2005

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1950

Sir,

The undersigned hereby certifies that a true and correct copy of the foregoing
INFORMATION DISCLOSURE STATEMENT has been served upon attorney for Harris

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Office, Fax No. (571) 273-0100 on May 12, 2005.

Typed or printed name of person signing this certificate:

Patricia A. Mack

Signature:

Patricia A. Mack

PT-1365251 v1

21.8-00 2005 05/12 THU 15:37 [TX/RX NO 5185] 002

Exhibit C - Part 2
Page 149


TDY0002081

Our File 98118

Corporation, Third Party Requestor, this 12th day of May, 2005, by mailing the same via United

States first class mail, postage prepaid, addressed as follows:

Christopher F. Regan
Attorney for Harris Corporation, Third Party Requestor
Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.
255 S. Orange Ave., Suite 1401
P.O. Box 3791
Orlando, FL 32802


Christopher G. Wolfe
Registration No. 56,264

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- 2 -

21.6-00 2005 05/12 THU 15:37 [TX/RX NO 5185] 003

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Set Name	Query	Hit Count	Se Nam resu set
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR		
L14	L12 and L13	0	L1
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L12	L6 and L11	8	L1
L11	L9 or L10	308638	L11
L10	airplane	87669	L1
L9	aircraft	250341	L9
L8	L6 and L4	0	L8
L7	L2 and L6	0	L7
L6	5359446.pn. or 4642775.pn. or 4872182.pn. or 5445347.pn. or 4939652.pn. or ep0407179.pn. gb2276006.pn. ep0408094.pn. or ep0774274.pn. or 5761625.pn.	12	L6
L5	L1 and L4	0	L5
L4	automatic\$ adj communication	1604	L4
L3	L1 and L2	0	L3

L2 aircraft near (transmission adj system)

71 L2

L1 5359446.pn. or 4642775.pn. or 4872182.pn. or 5445347.pn. or 4939652.pn. or
ep0407179.pn. gb2276006.pn. ep0408094.pn. or ep0774274.pn.

10 L1

END OF SEARCH HISTORY



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Date • May 24, 2005

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Fax No. • 571-273-0100

From • Christopher G. Wolfe

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Secretary • Beth Ann Staub

Phone • 412-355-8219

Attorney No. • 0694

Client/Matter Name Teledyne

Client ID/Matter No. • 0215788/0124

COMMENTS:

LETTER REGARDING CERTIFICATES OF SERVICE

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PI-1371633 v1

21.6-00 2005 05/24 TUE 12:58 [TX/RX NO 5201] @002

Attorney Docket No. 98118

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	Examiner: Yonel Beaulieu
U.S. Patent No. 6,181,990	Art Unit: 3661
Control No.: 90/006,742	Title: AIRCRAFT FLIGHT DATA
Filing Date: August 12, 2003	ACQUISITION AND TRANSMISSION
Inventors: Grabowsky et al.	SYSTEM

LETTER REGARDING CERTIFICATES OF SERVICE

May 24, 2005

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1950

Sir:

On Monday, May 23, 2005, the undersigned received a telephone call from Examiner Randolph Reese regarding the Certificate of Service filed in the above case on May 12, 2005, certifying that the INFORMATION DISCLOSURE STATEMENT was served upon counsel for the third party requestor. Examiner Reese requested that the undersigned re-certify that the Information Disclosure Statement was

Certificate of Transmission

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-0100 on May 24, 2005.

Typed or printed name of person signing this certificate:

Patricia A. Mack

Signature:

Patricia A. Mack

PI-1371428 v1

21.6-00 2005 05/24 TUE 12:59 [TX/RX NO 5201] @003

Attorney Docket No. 98118

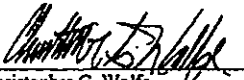
served in a document specifying the date that the INFORMATION DISCLOSURE STATEMENT was filed.

Accordingly, the undersigned hereby re-certifies that a true and correct copy of the INFORMATION DISCLOSURE STATEMENT filed on April 20, 2005, was served upon the attorney for Harris Corporation, Third Party Requestor on May 12, 2005, by mailing the same via United States first class mail, postage prepaid, addressed as follows:

Christopher F. Regan
Attorney for Harris Corporation, Third Party Requestor
Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.
255 S. Orange Ave., Suite 1401
P.O. Box 3791
Orlando FL 32802

For the purpose of clarity, the undersigned also hereby re-certifies that a true and correct copy of the SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT filed on May 12, 2005, was served upon the attorney for Harris Corporation, Third Party Requestor on May 12, 2005, by mailing the same via United States first class mail, postage prepaid, addressed as above.

Respectfully submitted,


Christopher G. Wolfe
Registration No. 56,264

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- 2 -

21.6-00 2005 05/24 TUE 12:58 [TX/RX NO 5201] @004

Attorney Docket No. 98118

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	Examiner: Yonel Beaulieu
U.S. Patent No. 6,181,990	Art Unit: 3661
Control No.: 90/006,742	Title: AIRCRAFT FLIGHT DATA
Filing Date: August 12, 2003	ACQUISITION AND TRANSMISSION
Inventors: Grabowsky et al.	SYSTEM

CERTIFICATE OF SERVICE

May 24, 2005

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1950

Sir:

The undersigned hereby certifies that a true and correct copy of the foregoing LETTER
REGARDING CERTIFICATES OF SERVICE filed on May 24, 2005, has been served upon the attorney

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I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark
Office, Fax No. (571) 273-0100 on May 24, 2005.

Typed or printed name of person signing this certificate:

Patricia A. Mack

Signature:

Patricia A. Mack

PI-1371438 v1

21.6-00 2005 05/24 TUE 12:59 [TX/RX NO 5201] @005

Attorney Docket No. 98118

of record for Harris Corporation, Third Party Requestor, this 24th day of May, 2005, by mailing the same
via United States first class mail, postage prepaid, addressed as follows:

Christopher F. Regan
Attorney for Harris Corporation, Third Party Requestor
Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.
255 S. Orange Ave., Suite 1401
P.O. Box 3791
Orlando, FL 32802


Christopher G. Wolfe
Registration No. 56,264

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21.8-00 2005 05/24 TUE 12:59 [TX/RX NO 5201] 0008



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/006,742	08/12/2003	6181990	GCSD-1360 (51298)	1151
7590 06/03/2005 Kirkpatrick & Lockhart LLP Henry W. Oliver Building 535 Smithfield Street Pittsburgh, PA 15222			EXAMINER	
			ART UNIT 1 PAPER NUMBER	
DATE MAILED: 06/03/2005				

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action in Ex Parte Reexamination	Control No. 90/006,742	Patent Under Reexamination 6181990	
	Examiner Yonel Beaulieu	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

a ☐ Responsive to the communication(s) filed on _____. b ☐ This action is made FINAL.

c ☐ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c). If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892. 3. ☐ Interview Summary, PTO-474.

2. ☒ Information Disclosure Statement, PTO-1449. 4. ☐ _____

Part II SUMMARY OF ACTION

1a. ☒ Claims 1-33 are subject to reexamination.

1b. ☐ Claims _____ are not subject to reexamination.

2. ☐ Claims _____ have been canceled in the present reexamination proceeding.

3. ☒ Claims 5,8-14 and 25-32 are patentable and/or confirmed.

4. ☒ Claims 1-4,6,7,15-24 and 33 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ The drawings, filed on _____ are acceptable.

7. ☐ The proposed drawing correction, filed on _____ has been (7a) ☐ approved (7b) ☐ disapproved.

8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have

1 ☐ been received.

2 ☐ not been received.

3 ☐ been filed in Application No. _____.

4 ☐ been filed in reexamination Control No. _____.

5 ☐ been received by the International Bureau in PCT application No. _____.

* See the attached detailed Office action for a list of the certified copies not received.

9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11,453 O.G. 213.

10. ☐ Other: _____

cc: Requester (if third party requester)

U.S. Patent and Trademark Office
PTOL-466 (Rev. 04-01)

Office Action in Ex Parte Reexamination

Part of Paper No. 20051305

Application/Control Number: 90/006,742
Art Unit: 3661

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action: .

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 6, 7, 15 – 20, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Ross et al. (US 5,351,194).

Regarding claims 1, 18, and 19, Ross teaches an aircraft data transmission system (see fig. 1) and a computer-implemented method (fig. 2), the aircraft having a data acquisition unit (10), the system/method comprising a communications unit (24) located in the aircraft and in communication with the data acquisition unit (10); a cellular infrastructure (note col.4, lines 40 – 50) in communication with the communications unit after the aircraft has landed, wherein communication is initiated automatically upon landing of the aircraft; and a data reception unit (32) in communication with the cellular infrastructure (col. 5, lines 48 – 66 at least).

Regarding claim 4, Ross further teaches the use of a modem for facilitating communication between the communications unit and the cellular infrastructure (note col. 6, lines 48 – 51 at least).

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Regarding claim 6, Ross further teaches an antenna communicating with a transceiver subsystem and a controller (see fig. 1; note col. 4, lines 35 – 50 at least).

Regarding claim 7, Ross further teaches a router (though not explicitly, the cited "router" is inherent in Ross' teaching of cell infrastructures).

Regarding claim 15, Ross teaches an aircraft data transmission system (fig. 1), the aircraft having a data acquisition unit (10), the system comprising means (24) for automatically transmitting data from the acquisition unit via a cellular infrastructure after the aircraft has landed and means (32) for receiving the data (col. 4, lines 40 – 50 and col. 6, lines 13 - 36 at least).

Regarding claims 16 and 17, Ross' means for transmitting data includes a processor (note items 10 and 16 combined in fig. 1).

Regarding claim 20, Ross further teaches receiving the transmitted data at a flight operations center (ATC 30 receives data from item 24).

Regarding claim 33, Ross teaches a computer readable medium having stored thereon instructions which, when executed by a processor, cause the processor to perform the steps (supported by fig. 2) reception of flight data, processing of the data and automatic transmission of the data via a cellular infrastructure when an aircraft has

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landed (Ross' processors in both the aircraft and the ground station each processes information with respect to a computer readable medium (again, see fig. 2; note col. 6, lines 13 – 63 at least).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1 – 4, 6, 7, 15 – 24, and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Wright et al. (US 6,047,165).

Regarding claims 1, 15, 18, 19, and 33, Wright teaches an aircraft data transmission system/computer-implemented method and computer medium, the aircraft having a data acquisition unit (title; col. 1, lines 1 – 5; DFDAU 16, col. 8, lines 38 – 48; DFDR 18 operative with GDL 101, col. 8, lines 59 – 64), the system/computer-

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implemented method and computer medium comprising a communications unit (24) located in the aircraft and in communication with the data acquisition unit (GDL airborne segment 101, GDL unit 111, GDL antenna 113; col. 7, lines 6 – 9; col. 8, lines 38 - 48); a cellular infrastructure in communication with the communications unit after the aircraft has landed (Fig. 1A, circular cells defined by wireless routers 201 and base stations 202; fig. 4, circular cells 214, 215, col. 6, lines 50 – 52; col. 9, lines 51 – 57; col. 15, lines 5 – 14 define the system as a cellular infrastructure typical of cellular telephone network), wherein communication is initiated automatically upon landing of the aircraft (col. 16, lines 33-34; "that is automatically downloaded...when aircraft lands."); and a data reception unit in communication with the cellular infrastructure (server/archive 204 in association with server/archive 304; col. 7, lines 33 - 37).

Regarding claim 2, Wright further teaches the data reception unit is in communication with the cellular infrastructure via the Internet (TCP/IP operative with TELCO connection (Fig. 1) clearly defined the use of the Internet).

Regarding claim 3, Wright further teaches the reception unit is in communication with the infrastructure via the PSTN (server/archive 304, gateway segment 306 in communication with ground subsystem 200 via ISDN TELCO (Fig. 1); col. 7, lines 44 -- 46; TELCO is public switch telephone network).

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Regarding claim 4, Wright further teaches the communications unit having at least one modem in communication with cellular infrastructure and the reception unit having at least one modem in communication with the cellular infrastructure (network transceiver 26 naturally includes modem to modulate/demodulate signals and base station 202 naturally includes modem with server 204 to demodulate/modulate signals and operative with Ethernet LAN 207).

Regarding claim 6, Wright further teaches an antenna (items 222, 223, fig. 5, col. 10, lines 32 – 39; a transceiver subsystem in communication with the antenna (transceiver 221, fig. 5); and a controller in communication with the transceiver subsystem (controller/processor 225; fig. 5; col. 10, lines 44 – 47).

Regarding claim 7, Wright further teaches a router (201) and a processor (304) in communication with the router (item 304 is in communication with router 201; fig. 1; col. 8, lines 1 – 8), the processor having a storage unit (col. 8, lines 1 – 8).

Regarding claim 16, Wright further teaches the inclusion of a processor (22; fig. 3) in the means for transmitting data.

Regarding claim 17, Wright further teaches the inclusion of a processor in the receiving means (server 304 in communication with router 201; fig. 1; col. 8, lines 1 – 8).

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Regarding claim 20, Wright further teaches receiving the transmitted data at a flight operations center (fig. 1 shows a remote flight operations control center 300).

Regarding claim 21, Wright further teaches reception and transmission of data via the Internet before receiving the transmission at a flight operations center (TCP/IP operative with TELCO connection in fig. 1 clearly defines use with the Internet).

Regarding claim 22, Wright further teaches reception and transmission of data via the PSTN before receiving the data at a flight operations center (server/archive 304, gateway segment 306 in communication with ground subsystem 200 via ISDN TELCO (fig. 1); col. 7, lines 44 – 46).

Regarding claim 23, Wright further teaches compressing flight data (source coding can be used for data compression. Aircraft data downloaded as compressed data; col. 11, lines 5 – 11 and 20 – 23); encrypting the data (col. 11, lines 5 – 7); segmenting the data (col. 11, lines 5 – 7 and 12 – 19); and constructing packets of data from the segmented flight data (col. 12, lines 57 – 59).

Regarding claim 24, Wright further teaches acknowledging receipt of the transmitted data (polling occurs and receipts of packets acknowledged and retransmissions requested when errors occur; col. 4, lines 7 – 30; col. 16, lines 34 – 39) reassembling the received data, decrypting the data and storing the uncompressed data

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(fig. 1 -- base station segment operative with wireless bridge segment and receives packets based on TCP/IP and operative with remote flight operations control center 300; also operative with GDL work station segment 303 and controller 301 to acknowledge receipt, reassemble data, decrypt, uncompress and store for further use in server/archive 304).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ross et al. ('194) as applied to claims 1 and 20 above, and further in view of Bannister et al. (US 5,943,399).

As discussed above, Ross teaches all of the limitations except for the communication being via the Internet and via a PSTN.

However, Bannister et al. teaches, in an analogous communication art, data transmission carried out via the use of an Internet connection (item 300 in fig. 1, 8, or 9) and via a public switching telephone network (200 in fig. 1, 8, or 9).

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It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Ross' teaching by providing an Internet and a PSTN connection as evidenced by Bannister et al. for purposes of enhancing data transmission.

Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ross et al. ('194) as applied to claim 19 above, and further in view of Polivka et al. (US 5,463,656).

As discussed above, Ross teaches all of the limitations except for compressing/uncompressing, encrypting/decrypting and segmenting/reassembling the flight data and constructing packets of data from the segmented flight data.

However, Polivka teaches, in the same field of endeavor of processing flight data, compressing/uncompressing, encrypting/decrypting and segmenting/reassembling the flight data and constructing packets of data from the segmented flight data. Polivka provides for compressing/constructing data (note item 323 in fig. 3A), encrypting data (note encoder unit (330 in fig. 3B), segmenting and constructing packets of data (note modulator 361 in fig. 3B – note col. 10, lines 13 et seq.).

The combination of Ross and Polivka is at least fully functionally equivalent to what is claimed in claims 23 and 24 and would have been obvious to one of ordinary

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skill in the art at the time of the invention was made because all of the structural features are taught by the combination in order to achieve the same end result of processing flight data.

With regard to the acknowledgment of transmitted data receipt, such is conventional and is no more than bi-directional communication involving only routine skill in the art.

Patentable Subject Matter

Claims 5, 8 – 14 and 25 – 32 are confirmed because the prior art of record fail to teach a transmission system and method for aircraft comprising, among other limitations, at least one cell channel in communication with a serial card and an antenna to initiate automatic communication.

Conclusion

In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116, which will be strictly enforced.

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and

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Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extension of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yonel Beaulieu whose telephone number is (571) 272-6955. The examiner can normally be reached on M-W 9-3; F 9-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas BLACK can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Y. BEAULIEU
AU 3661

Y. Beaulieu
YONEL BEAULIEU
PRIMARY EXAMINER



PTO/SB08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Control No.	90/006,742
		Filing Date	August 12, 2003
		First Named Inventor	Grabowsky
		Art Unit	3681
		Examiner Name	Yonel Beaulieu
Sheet 1 of 1	Attorney Docket Number	98118	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
✓		5,359,446	10-25-1994	Johnson et al.	
		4,642,775	02-10-1987	Cline et al.	
		4,872,182	10-03-1989	McRae et al.	
		5,445,347	08-29-1995	Ng	
✓		4,939,652	07-03-1990	Steiner	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ³
		Country Code ¹ -Number ⁴ -Kind Code ¹ (if known)				
✓		EP 0 407 179 A1	01-09-1991	Barry et al.		
✓		GB 2 276 005 A	09-14-1994	Sanders et al.		
✓		EP 0 408 094 B1	07-09-1997	Siam et al.		
✓		EP 0 774 274 B1	05-21-1997	Lu		

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume/issue number(s), publisher, city and/or country where published		T ³
MS		Airlines Electronic Engineering Committee, ARINC Characteristic 751, "Gate-Aircraft Terminal Environment Link (GateLink)-Aircraft Side", Published January 1, 1994		
MS		Airlines Electronic Engineering Committee, Specification 632, "Gate-Aircraft Terminal Environment Link (GateLink)-Ground Side", Published December 30, 1994		

Examiner Signature	<i>[Signature]</i>	Date Considered	05/13/05
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

*Applicant's unique citation designation number (optional). *See Kind Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. *Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). *For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. *Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. *Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 20 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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10/11/05 10:12:00 FROM: JIMMY HIRAKA & LORAN 412 335 3181

10/11/05 10:12:00

10/11/05

PTO/5B/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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Substitute for form 1449A/PTO		Complete If Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Control No.	90/006,742
		Filing Date	August 12, 2003
		First Named Inventor	Grabowsky
		Art Unit	3861
		Examiner Name	Yonel Beaulieu
Sheet 1 of 1	Attorney Docket Number	98118	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Class No.	Document Number Number - Kind Code* (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Child Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
W		3,761,626	06-02-1998	Honick et al.	

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Class No.	Foreign Patent Document Country Code* Number* Kind Code* (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Child Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Class No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	Y*

Examiner Signature		Date Considered	5/24/05
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*Applicant's unique citation designation number (optional). *See Kind Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. *Enter Office that issued the document, by the two-letter code (HPO Standard ST.3.) *For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. *Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. *Applicant is to place a check mark here if English language Translation is attached.

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21.6-00 2006 05/12 THU 15:28 (TX/RX NO 6184) 004

Interview Summary	Application No.	Applicant(s)	
	90/006,742	8181980	
	Examiner	Art Unit	
	Yonel Beaulieu	3681	

All participants (applicant, applicant's representative, PTO personnel):

(1) Yonel Beaulieu (3) _____

(2) Jonathan Parks (Ray 40, 120) (4) _____

Date of Interview: 06 July 2005

Type: a) ☐ Telephonic b) ☐ Video Conference
c) ☒ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☒ Yes e) ☐ No.
If Yes, brief description: _____

Claim(s) discussed: _____

Identification of prior art discussed: Ross ('194) & Wright ('165)

Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: _____

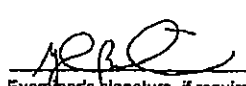
(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Applicant's Representative argues the Ross (US '194) & Wright (US '165) teach away from applicant's claimed invention. In particular, Ross does not communicate the data upon landing of the aircraft, whereas Wright does not teach this idea of cellular infrastructure to communicate (transmit) the data.

Such will be given further consideration upon filing and entry of an amendment. The added limitations are subject to further search for additional consideration.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.


Examiner's signature, if required

U.S. Patent and Trademark Office
PTOL-413 (Rev. 04-03)

Interview Summary

Paper No. 20051305

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent and Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiner's Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	Examiner: Yonel Beaulieu
U.S. Patent No. 6,181,990	Art Unit:
Control No.: 90/006,742	Title: AIRCRAFT FLIGHT DATA
Filing Date: August 12, 2003	ACQUISITION AND TRANSMISSION
Inventors: Grabowsky et al.	SYSTEM

AMENDMENT AND RESPONSE TO OFFICE ACTION IN EX PARTE REEXAMINATION

July 26, 2005

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

This paper is submitted in the above-referenced reexamination of U.S. Patent No. 6,181,990 (hereinafter "the '990 patent"). In response to the Office Action mailed on June 3, 2005, the Patent Owner responds as follows, where:

A section entitled Amendments to the Claims begins on page 2; and

A section entitled Remarks begins on page 5.

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AMENDMENTS TO THE CLAIMS

The Patent Owner respectfully requests entry of the following amendments to the claims:

1. (amended): An aircraft data transmission system, the aircraft having a data acquisition unit, and the aircraft including a data storage medium having stored thereon flight data gathered in-flight by at least one sensor on the aircraft, comprising:

a communications unit located in the aircraft and in communication with the data acquisition unit;

a cellular infrastructure in communication with said communications unit after the aircraft has landed, wherein the cellular infrastructure communicates said flight data, and wherein the communication is initiated automatically upon landing of the aircraft; [and]

a data reception unit in communication with said cellular infrastructure; and
wherein said flight data includes time, airspeed, altitude, vertical acceleration, and heading data relating to a flight of the aircraft.

15. (amended): An aircraft data transmission system, the aircraft having a data acquisition unit, the aircraft including a data storage medium having stored thereon flight data gathered in-flight by at least one sensor on the aircraft, comprising:

means for transmitting said flight data from the data acquisition unit, via a cellular infrastructure after the aircraft has landed, wherein transmission of the data is initiated automatically upon landing of the aircraft; [and]

means for receiving said flight data from said cellular infrastructure; and

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wherein said flight data includes time, airspeed, altitude, vertical acceleration, and heading data relating to a flight of the aircraft.

18. (amended): A method of transmitting aircraft flight data from an aircraft, comprising:

receiving flight data from a data acquisition unit;

transmitting said flight data via a cellular communications infrastructure after the aircraft has landed, wherein the cellular communications infrastructure is accessed automatically upon landing of the aircraft; [and]

receiving said transmitted flight data; and

wherein said flight data is gathered in-flight by at least one sensor on the aircraft, and includes time, airspeed, altitude, vertical acceleration, and heading data relating to a flight of the aircraft.

19. (amended): A computer-implemented method of transmitting aircraft flight data from an aircraft, comprising:

receiving flight data from a digital flight data acquisition unit, wherein said flight data is gathered in-flight by at least one sensor on the aircraft, and includes time, airspeed, altitude, vertical acceleration, and heading data relating to a flight of the aircraft;

processing said flight data to prepare said data for transmission; and

transmitting said processed data via a cellular infrastructure after the aircraft has landed, wherein the cellular infrastructure is accessed automatically upon landing of the aircraft.

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33. (amended): A computer readable medium having stored thereon instructions which when executed by a processor, cause the processor to perform the steps of:

receiving flight data from a digital flight data acquisition unit in an aircraft, wherein said flight data is gathered in-flight by at least one sensor on the aircraft, and includes time, airspeed, altitude, vertical acceleration, and heading data relating to a flight of the aircraft;

processing said flight data to prepare said data for transmission; and

transmitting said processed data via a cellular infrastructure when said aircraft has landed, wherein the cellular infrastructure is accessed automatically upon landing of the aircraft.

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REMARKS

The '990 patent includes claims 1-33. In the Office Action, claims 5, 8-14 and 25-32 are confirmed. Claims 1-4, 6, 7, 15-24 and 33 are rejected. Specifically, claims 1, 4, 6, 7, 15-20 and 33 are rejected under 25 U.S.C. section 102(b) as being anticipated by U.S. Patent No. 5,351,194 to Ross et al. (Ross). Claims 1-4, 6, 7, 15-24 and 33 are rejected under 35 U.S.C. section 102(e) as being anticipated by U.S. Patent No. 6,047,165 to Wright, et al. (Wright). Claims 2, 3, 21 and 22 are rejected under 35 U.S.C. section 103(a) as being unpatentable over Ross in further view of U.S. Patent No. 5, 943,399 to Bannister, et al. (Bannister). Claims 23 and 24 are rejected under 35 U.S.C. section 103(a) as being unpatentable over Ross in further view of U.S. Patent No. 5,463,656 to Polivka, et al. (Polivka). The Patent Owner traverses all of the claim rejections.

Statement under 37 CFR 1.560(b)

The Patent Owner and the undersigned would like to thank the Examiner for the courtesies extended during the interview of July 6, 2005 (the interview). Pursuant to 37 CFR 1.560(b), the Patent Owner provides below, "a complete written statement of the reasons presented at the interview as warranting favorable action." See 37 CFR 1.560(b).

(1) The Patent Owner argued that claims 1, 15, 18, 19 and 33 are patentable over Ross because Ross fails to teach communicating "flight data . . . wherein the communication is initiated automatically upon landing the aircraft." To the contrary, Ross only teaches sending a flight plan cancellation upon the landing of an aircraft, not "flight data" as recited in claims 1, 15, 18, 19 and 33.

(2) The Patent Owner also argued that Ross does not teach "a data storage medium having stored thereon flight data" as recited in claims 1 and 15. In fact, Ross does not teach any kind of storage of "flight data."

(3) The Patent Owner also argued that claims 1, 15, 18, 19 and 33, as amended, are patentable over Wright because Wright fails to teach any "cellular infrastructure." Instead, Wright teaches transmitting data in unlicensed frequency bands to a series of "airport-resident GDL wireless router segments 201" located at various locations in an airport. The Patent Owner also noted that, in addition, Wright teaches away from transmitting in licensed frequencies, such

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as those used by cellular infrastructures. See Wright at col. 14, ll. 32-40.

Claim Amendments

The Patent Owner has amended the claims as follows:

(1) Independent claim 1 has been amended to recite that the, "flight data includes time, airspeed, altitude, vertical acceleration, and heading data relating to a flight of the aircraft," and is "gathered in-flight by at least one sensor on the aircraft." Claims 15, 18, 19 and 33 have been similarly amended.

(2) Independent claim 1 has been amended to recite that, "the cellular infrastructure communicates said flight data." Claim 15 has been similarly amended.

(3) Independent claim 1 has been amended to recite that the aircraft includes, "a data storage medium having stored thereon flight data." Claim 15 has been similarly amended.

The Patent Owner submits that support for all of the claim amendments may be found throughout the specification, for example, at col. 3, ll. 7-20.

The Ross Reference

The Ross reference teaches, "an apparatus and method of canceling a flight plan of an aircraft to facilitate release of an IFR [Instrument Flight Rules] airspace to other aircraft and for communicating the location of a downed aircraft during emergencies." See Ross at Abstract. In the disclosure of Ross, a controller 10 includes three switches, as illustrated in Figure 1 below:

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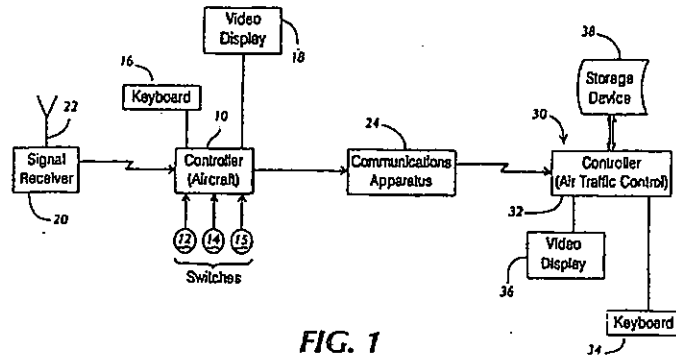


FIG. 1

A switch 14 may be activated manually by the pilot, or automatically when the aircraft lands. *See Ross* at col. 4, ll. 25-30. When switch 14 is activated, the controller 10 communicates with a flight control center 30 to cancel an IFR flight plan for the aircraft, allowing airspace assigned to the aircraft to be released. *See Ross* at col. 5, ll. 48-66. The Patent Owner notes that canceling an IFR flight plan typically involves nothing more than making a brief voice telephone call to the air traffic controller, not any sizable transmission of data.

An additional switch 15 of *Ross's* controller 10 may be activated in flight by the pilot of the aircraft in the event of an emergency. When switch 15 is activated, the controller 10 communicates in flight the altitude, airspeed and direction of the aircraft to the flight control center 30. *See Ross* at col. 6, ll. 13-22. Another switch 12 of the controller 10 may be activated by a high-impact force, such as a crash. When switch 12 is activated, the controller may transmit the aircraft's current location to the flight control center 30.

The Wright Reference

The Wright reference teaches, "a flight information communication system [with] a plurality of RF direct sequence spread spectrum ground data links that link respective aircraft-resident subsystems, in each of which a copy of its flight performance data is stored, with airport-located subsystems." *See Wright* at Abstract.

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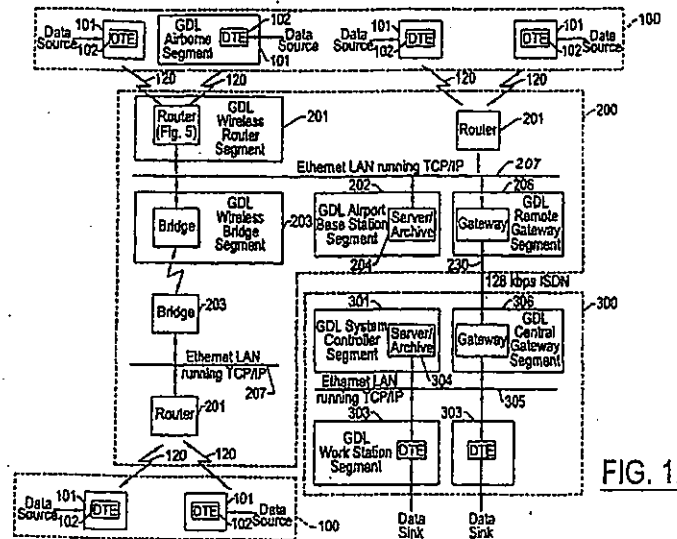


FIG. 1.

As shown in Figure 1 above, Wright's "airport-located subsystem" or "airport-resident ground system 200" includes a complex infrastructure that has a plurality of "airport-resident GDL wireless router segments 201." See Wright at col. 7, ll. 24-27. The "airport-resident ground system 200" is in communication with an "aircraft-installed ground data link (GDL) subsystem 100" through the "wireless router segments 201" over a series of "communication links 120." Wright teaches that "communication links 120" are, "spread spectrum radio frequency (RF) links having a carrier frequency lying in an unlicensed portion of the electromagnetic spectrum." See Wright at col. 14, ll. 32-40. Interference between the "communication links 120" may be minimized by employing "different transmit frequencies and a different channel spacing" in a way that is "akin to that employed in cellular telephone networks." See Wright at col. 15, ll. 1-16.

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Section 102(b) Rejections Over Ross

The Patent Owner submits that the rejections over Ross should be withdrawn because Ross fails to disclose each and every element recited in claims 1, 15, 18, 19 and 33. See MPEP § 2131 (stating that a claim is anticipated only if each and every element as set forth in the claim is disclosed in a single prior art reference).

For example, the Patent Owner submits that Ross fails to teach, among other things, communicating, "flight data. . . wherein the communication is initiated automatically upon landing of the aircraft," as recited in claim 1. Ross teaches canceling a flight plan on landing. See Ross at col. 5, ll. 48-66. Canceling a flight plan does not, however, involve communicating, "flight data includ[ing] time, airspeed, altitude, vertical acceleration, and heading data relating to a flight of the aircraft," as recited in claim 1. Further, canceling a flight plan does not involve communicating "flight data gathered in-flight by at least one sensor on the aircraft," as recited in claim 1. Instead, canceling a flight data plan involves placing a brief telephone call and does not involve the transmission of flight data which, in various embodiments, includes the transmission of a large amount of data.

Ross does teach communicating, "altitude, air speed, and direction of the aircraft" from the aircraft to the flight control center 30 of Ross. See Ross at col. 6, ll. 13-22. This communication, however, takes place when the pilot manually activates switch 15 of Ross in flight, not, "automatically upon landing of the aircraft," as recited in claim 1.

Accordingly, the Patent Owner submits that claim 1, as well as claims 2-7 which depend directly or indirectly from claim 1, are patentable over Ross. Independent claims 15, 18, 19 and 33 have been amended to contain limitations similar to those limitations of claim 1 discussed above, and therefore claims 15, 18, 19 and 33, as well as claims 16-17 and 20-24 which depend directly or indirectly from claims 15 and 19, respectively, are patentable over Ross.

In addition to the distinctions over Ross discussed above, the Patent Owner submits that claims 1 and 15 include at least one other element that Ross fails to teach. For example, claims 1 and 15 recite, "the aircraft including a data storage medium having stored thereon flight data." Ross is silent as to storing any "flight data" on the aircraft. Accordingly, claims 1 and 15, as well as claims 2-7 and 16-17, which depend directly or indirectly from claims 1-15 are patentable over

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Ross for this additional reason as well as those discussed above with respect to claims 1, 15, 18, 19, and 33.

Section 102(e) Rejections over Wright

The Patent Owner submits that the rejections over Wright should be withdrawn because Wright fails to disclose each and every element recited in claim 1. *See* MPEP § 2131. For example, the Patent Owner submits that Wright fails to teach, among other things, “a cellular infrastructure” that “communicates said flight data,” as recited in claim 1.

Wright teaches an “airport-resident ground system 200” having a plurality of “wireless router segments 201.” *See* Wright at col. 7, ll. 24-38. The “wireless router segments 201” are in communication with aircraft-based systems over “wireless communication links 120.” *See* Wright at col. 6, ll. 55-62. The “airport-resident ground system 200” of Wright is clearly not a “cellular infrastructure” as recited in claim 1. For example, Wright teaches that its “wireless communication links 120” utilize unlicensed carrier frequencies. *See, e.g.* Wright at col. 14, ll. 32-40. It is well known in the art of cellular communication that a cellular infrastructure, such as a mobile telephone voice/data network, uses carrier frequencies in the licensed frequency range. Accordingly, the “airport-resident ground system 200” of Wright cannot be a “cellular infrastructure” as recited in claim 1.

Not only does Wright fail to teach the use of a cellular infrastructure, but it, in fact, teaches away from it. For example, Wright cites its use of unlicensed (and therefore non-cellular) carrier frequencies as a “particularly useful characteristic” while noting that other options, including those operating in the licensed frequency spectrum (such as, for example, the licensed frequency bands used by a cellular infrastructure), “restrict usage geographically or require the user to obtain a license in order to operate the system.” *See* Wright at col. 14, ll. 32-40. This demonstrates that claim 1 is not only novel over Wright, but is also non-obvious. *See* MPEP § 2144.05 (A *prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention).

The Patent Owner notes that the “airport-resident ground system 200” of Wright does have “overlapping [unlicensed band] ground link communication coverage, as indicated by

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overlapping circles 214 and 215," and a co-channel interference minimization scheme described as, "akin [*i.e.*, similar] to that employed in cellular telephone networks." See Wright at col. 9, ln. 58 – col. 10, ln. 3, col. 15, ll. 1-16. However, these characteristics merely show that the "airport-resident ground system 200" of Wright uses some techniques similar to those used in cellular, or mobile, communication. The "airport-resident ground system 200," though, is clearly not a "cellular infrastructure," especially in light of the differences and teaching away as discussed above.

Accordingly, the Patent Owner submits that claim 1, as well as claims 2-7 which depend directly or indirectly from claim 1, are patentable over Wright. Independent claims 15, 18, 19 and 33 include limitations similar to those of claim 1 discussed above, and therefore claims 15, 18, 19 and 33, as well as claims 16-17 and 20-24 which depend directly or indirectly from claims 15 and 19, respectively, are patentable over Wright.

The Patent Owner is not conceding the correctness of the Office's rejections with respect to any of the dependent claims discussed above and hereby reserves the right to make additional arguments as may be necessary because the dependent claims include additional features that further distinguish the claims from the cited references, taken alone or in combination. A detailed discussion of these differences is believed to be unnecessary at this time in view of the basic differences in the independent claims pointed out above.

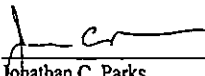
Attorney Docket No. 98118

CONCLUSION

Patent Owner respectfully asserts that claims 1-4, 6, 7, 15-24 and 33 as amended herein have been shown to be patentable over the references cited in the June 3, 2005 Office Action in the present reexamination proceeding. Accordingly, the Patent Owner respectfully requests issuance of a reexamination certificate directed to claims 1-4, 6, 7, 15-24 and 33 as herein amended as well as to previously confirmed claims 5, 8-14 and 25-32.

As required under 37 C.F.R. § 1.550(f), a copy of this response has been provided to the reexamination requester in the manner set forth in 37 C.F.R. § 1.248.

Respectfully submitted,


Jonathan C. Parks
Registration No. 40,120

Attorney for the Patent Owner

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Customer #: 26285



Attorney Docket No. 98118

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing
AMENDMENT AND RESPONSE TO OFFICE ACTION IN REEXAMINATION was served
by First Class Mail, postage prepaid, upon:

Christopher F. Regan
Attorney for Harris Corporation, Third Party Requestor
Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.
255 S. Orange Ave., Suite 1401
P.O. Box 3791
Orlando, FL 32802.


Jonathan C. Parks



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of
U.S. Patent No. 6,181,990
Control No.: 90/006,742
Filing Date: August 12, 2003
Inventors: Grabowsky et al.

Examiner: Yonel Beaulieu
Art Unit:
Title: AIRCRAFT FLIGHT DATA
ACQUISITION AND TRANSMISSION
SYSTEM

EXPRESS MAIL CERTIFICATE

"Express Mail" label number EUI5083510ZUS

Date of Deposit July 26, 2005

I hereby certify that the following attached paper or fee

AMENDMENT TRANSMITTAL
AMENDMENT AND RESPONSE TO OFFICE ACTION IN EX PARTE REEXAMINATION

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box: 1450, Alexandria, VA 22313-1450.

Beth H. Retort
(Typed or printed name of person mailing paper or fee)
[Signature]
(Signature of person mailing paper or fee)

NOTE: Each paper must have its own certificate and the "Express Mail" label number as a part thereof or attached thereto. When, as here, the certification is presented on a separate sheet, that sheet must (1) be signed and (2) fully identify and be securely attached to the paper or fee it accompanies. Identification should include the serial number and filing date of the application as well as the type of paper being filed, e.g. complete application, specification and drawings, responses to rejection or refusal, notice of appeal, etc. If the serial number of the application is not known, the identification should include at least the name of the inventor(s) and the title of the invention.

NOTE: The label number need not be placed in each page. It should, however, be placed on the first page of each separate document, such as, a new application, amendment, assignment, and transmittal letter for a fee, along with the certificate of mailing by "Express Mail." Although the label number may be on checks, such a practice is not required. In order not to deface formal drawings it is suggested that the label number be placed on the back of each formal drawing or the drawings be accompanied by a set of informal drawings on which the label number is placed.

(Express Mail Certificate [8-3])

PT-1409717 v1 0215786-0124



7-07-03

Attorney's Docket No. 98118

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of

Examiner: Yonel Beaulieu

U.S. Patent No. 6,181,990

Art Unit:

Control No.: 90/006,742

Title: AIRCRAFT FLIGHT DATA

Filing Date: August 12, 2003

ACQUISITION AND TRANSMISSION

Inventors: Grabowsky et al.

SYSTEM

Commissioner for Patents
P.O. Box: 1450
Alexandria, VA 22313-1450

AMENDMENT TRANSMITTAL

1. Transmitted herewith is an amendment for this application.

STATUS

2. Applicant is

- ☐ A statement that this filing is by a small entity is hereby asserted in accordance with the rule change effective September 8, 2000, 65 Fed. Reg. 54603.
- ☒ other than a small entity.

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.89)

I hereby certify that this correspondence is, on the date shown below, being:

MAILING

FACSIMILE

☐ deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box: 1450, Alexandria, VA 22313-1450

☐ transmitted by facsimile to the Patent and Trademark Office.

Signature

Date

(Type or print name of person certifying)

PI-1409715 v1 0215766-0124

EXTENSION OF TERM

NOTE: "Extension of Time in Patent Cases (Supplement Amendments) - If a timely and complete response has been filed after a Non-Final Office Action, an extension of time is not required to permit filing and/or entry of an additional amendment after expiration of the shortened statutory period.

If a timely response has been filed after a Final Office Action, an extension of time is required to permit filing and/or entry of a Notice of Appeal or filing and/or entry of an additional amendment after expiration of the shortened statutory period unless the timely-filed response placed the application in condition for allowance. Of course, if a Notice of Appeal has been filed within the shortened statutory period, the period has ceased to run." Notice of December 10, 1985 (1061 O.G. 34-35).

NOTE: See 37 CFR 1.645 for extensions of time in interference proceedings, and 37 CFR 1.550(c) for extensions of time in reexamination proceedings.

3. The proceedings herein are for a patent application and the provisions of 37 CFR 1.136 apply.

a) (complete (a) or (b), as applicable)

(a) ☐ Applicant petitions for an extension of time under 38 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

<u>Extension (months)</u>	<u>Fee for other than small entity</u>	<u>Fee for small entity</u>
<input type="checkbox"/> one month	\$ 120.00	\$ 60.00
<input type="checkbox"/> two months	\$ 450.00	\$225.00
<input type="checkbox"/> three months	\$1,020.00	\$510.00
<input type="checkbox"/> four months	\$1,590.00	\$795.00

Fee \$

If an additional extension of time is required, please consider this a petition therefor.

(check and complete the next item, if applicable)

☐ An extension for _____ months has already been secured and the fee paid therefor of \$_____ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$

OR

(b) ☒ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

(Amendment Transmittal [9-19]-page 2 of 4

FEE FOR CLAIMS

4. The fee for claims (37 CFR 1.16(b)-(d)) has been calculated as shown below:

(Col. 1)	(Col. 2)	(Col. 3)	SMALL ENTITY		OTHER THAN A SMALL ENTITY	
CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NO PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDIT. FEE	OR	ADDIT. FEE
TOTAL 5	MINUS 33**	=0	X25=	\$0.		X50= \$0.
INDEP. 5*	MINUS 5**	=0	X100=	\$0		X200= \$0.
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEP. CLAIM			+180=	\$		+360= \$
			TOTAL ADDIT. FEE	\$0.	OR	TOTAL ADDIT. FEE \$0.

• If the entry in Col. 1 is less than entry in Col. 2, write "0" in Col. 3.

** If the "Highest No. Previously Paid for" IN THIS SPACE is less than 20, enter "20."

*** If the "Highest No. Previously Paid for" IN THIS SPACE is less than 3, enter "3."
The "Highest No. Previously Paid for" (Total or Indep.) is the highest number found in the appropriate box in Col. 1 of a prior amendment or the number of claims originally filed.**WARNING** "After final rejection or action (§ 1.113) amendments may be made cancelling claims or complying with any requirement of form which has been made." 37 CFR § 1.116(a) (emphasis added).

Complete (c) or (d), as applicable)

(c) ☒ No additional fee for claims is required.

OR

(d) ☐ Total additional fee for claims required \$ _____**FEE PAYMENT**5. ☐ Attached is a check in the sum of \$ _____☐ Charge Account No. _____ the sum of \$ _____

A duplicate of this transmittal is attached.

(Amendment Transmittal [9-18]-page 3 of 4)

FEE DEFICIENCY

NOTE: If there is a fee deficiency and there is no authorization to charge an account, additional fees are necessary to cover the additional time consumed in making up the original deficiency. If the maximum, six-month period has expired before the deficiency is noted and corrected, the application is held abandoned. In those instances where authorization to charge is included, processing delays are encountered in returning the papers to the PTO Finance Branch in order to apply these charges prior to action on the cases. Authorization to charge the deposit account for any fee deficiency should be checked. See the Notice of April 7, 1986, (1065 O.G. 31-33).

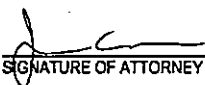
6. ☒ If any additional extension and/or fee is required, charge Account No.

7. 11-1110

AND/OR

☒ If any additional fee for claims is required, charge Account No.

11-1110


SIGNATURE OF ATTORNEY

Reg. No.: 40,120

Tel. No.: (412) 355-6288
Customer No. 26285

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(Amendment Transmittal [9-18]-page 4 of 4